

**Notice of Allowability**

Application No.

10/812,601

Examiner

James P. Hughes

Applicant(s)

RIESTER ET AL.

Art Unit

2883

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application 3-30-04.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>033004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                             | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 1-22 are allowed. The following is an examiner's statement of reasons for allowance. Independent claims 1, 19, and 21 are

Independent claim 1 is allowed because the prior art of record fails to teach or fairly suggest an apparatus or means for, a flexible active signal cable comprising a flexible printed circuit substrate; two electrical connectors; each located near one of two ends of the flexible printed circuit substrate; an optical transmitter optically coupled to one of the two ends of the at least one of the at least one flexible optical waveguide and electrically coupled to one of the two electrical connectors; and an optical receiver optically coupled to the other of the two ends of the at least one of the at least one flexible optical waveguide and electrically coupled to the other of the electrical connectors; in combination with the other recited limitations in the claim.

Following, claims 2-18 are allowed, as they are dependent on claim 1.

Independent claim 19 is allowed because the prior art of record fails to teach or fairly suggest an apparatus or means for, an electric device comprising a flexible printed circuit substrate to which there are affixed two electrical connectors separated by less than 0.5 meters; and a source connector mated to one of the two electrical connectors, the source connector carrying a set of electrical signals having a maximum combined data throughput equal to or greater than 25 megabits per second (kbps) that is transmitted by one of the at least one optical waveguides from the one of the two electrical connectors to the other of the two electrical connectors; in

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combination with the other recited limitations in the claim. Following, claim 20 is allowed, as it is dependent on claim 19.

Independent claim 21 is allowed because the prior art of record fails to teach or fairly suggest an apparatus or means for, a flexible active signal cable, comprising: two electrical connectors separated by less than 0.5 meters that are affixed to a flexible printed circuit substrate; at least one optical waveguide essentially spanning the two electrical connectors, wherein on of the at least one optical waveguides transmits an optical signal that has a data throughput of at least 25 megabits per second transduced from electrical signal received at one of the two electrical connectors; in combination with the other recited limitations in the claim.

Following, claim 22 is allowed, as it is dependent on claim 21.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sullivan (5,375,184) teaches a flexible channel optical waveguide (30) that connects a waveguide (14) to a photodetector (16). (See e.g., Fig. 1 and Col. 2, ll. 50 – Col. 3, ll. 45) Hibbs-Brenner et al. (4,404,960, and 6,709,607) teaches a flexible optical connector comprising

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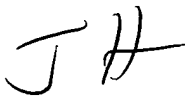
a laser or PD (19, 22) connected to a waveguide (13) in a flexible substrate (12) that is a variation of the invention (6,088,498) by the same inventor listed in the IDS.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James P. Hughes whose telephone number is 571-272-2474. The examiner can normally be reached on Monday - Friday 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James P. Hughes  
Patent Examiner  
Art Unit 2883



Frank G. Font  
Supervisory Patent Examiner  
Technology Center 2800